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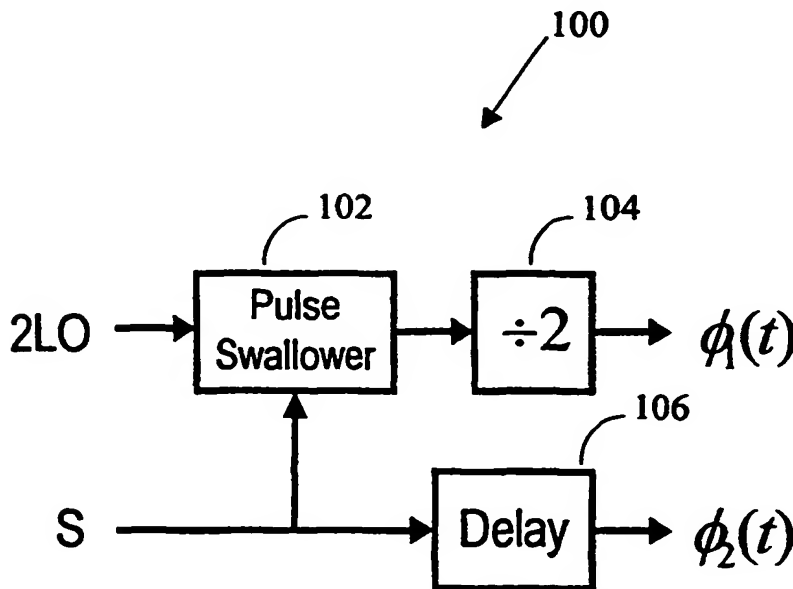
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(54) Title: IMPROVED METHOD AND APPARATUS FOR UP- AND DOWN-CONVERSION OF RADIO FREQUENCY (RF) SIGNALS



(57) Abstract: This patent describes a method and system which overcomes the LO-leakage problem of direct conversion and similar RF transmitters and receivers. To solve this problem a virtual LOTM signal is generated which emulates mixing with a local oscillator (LO) signal. However, the virtual local oscillator (VLO) signal is constructed using signals that do not contain a significant amount of power (or no power at all) at the wanted output RF frequency, so there is no LO component to leak to the output. The invention also does not require sophisticated filters or large capacitors as other designs in the art, so it is fully integratable.

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